AGRICULTURAL CHEMICAL USAGE 2001 POTATOES

Released: June 2002

United States Department of Agriculture
National Agricultural Statistics Service

OVERVIEW

The agricultural chemical use estimates in this report refer to on-farm use of commercial fertilizers and pesticides applied to potatoes in the state of Washington for the 2001 crop year. The data were compiled from the Agricultural Resources Management Study (ARMS) and the Field Crop Chemical Use Survey (FCCUS), with data collection occurring primarily during the months of July - November of 2001.

The data presented is part of an effort by the USDA to build a Pesticide Data Program used to evaluate the safety of the Nation's food supply. The Food Quality Protection Act mandates an accelerated review of all pesticide products before they can be re-registered for use. The implementation of the Act, in 1996, increased the need for reliable chemical data. This and other agricultural chemical use reports help fill the needs of analysts evaluating food safety issues we are faced with today. Targeted crops for the 2001 FCCUS included upland cotton, fall potatoes, and soybeans. Seven fall potato producing states were included in this survey: Idaho, Maine, Minnesota, North Dakota, Oregon, Washington, and Wisconsin.

SURVEY

Producers surveyed were selected from a large sample of operations that were screened for potatoes. These farms were sampled in such a way to insure that each identified producer had an opportunity to be selected.

Once a farm was selected, the operator was interviewed and a sample field was randomly selected. Information for the sample field was collected for fertilizer and pesticide applications. The chemical use estimates in this publication consist of survey estimates of those active ingredients. The chemical application data were collected by product name or trade name through personal interviews with the potato growers operating the sampled fields. Applications made after harvest of the previous year's crop through harvest of the current year's crop were included. Seed treatments and chemicals applied after harvest were excluded. The data were converted to active ingredient levels and summarized.

FALL POTATOES: CHEMICAL APPLICATIONS, TOTAL ACREAGE & PERCENTAGE RECEIVING APPLICATIONS, MAJOR STATES & TOTAL, 1999 & 2001

State	Planted Acreage		Area Receiving Fertilizer 1/						Area Receiving Pesticide 2/					
			Nitrogen		Phosphate		Potash		Herbicide		Insecticide 3/		Fungicide	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
	1,000 Acres		---------Percent----------						---------Percent---------					
CO 5/	77.2	-	98	-	95	-	74	-	86	-	76	-	98	-
ID	395.0	370.0	100	99	99	97	82	77	92	75	92	93	92	70
IN 5/	5.2	-	100	-	100	-	100	-	67	-	99	-	29	-
ME	65.0	62.0	100	98	100	98	100	98	100	92	97	88	100	98
MI 5/	48.0	-	100	-	98	-	100	-	100	-	100	-	99	-
MN	70.0	59.0	99	93	91	89	91	89	86	78	91	95	93	97
ND 4/	121.0	118.0	99	-	98	-	83	-	83	-	95	-	99	-
OR 4/	56.0	45.0	100	-	100	-	91	-	100	-	89	-	97	-
PA 5/	14.5	-	97	-	97	-	97	-	94	-	99	-	95	-
WA	**170.0**	**160.0**	**100**	**97**	**99**	**92**	**97**	**92**	**98**	**92**	**99**	**95**	**97**	**91**
WI	86.0	84.0	100	100	100	98	99	100	98	88	100	100	98	97
Total	**1,107.9**	**898.0**	**100**	**98**	**98**	**95**	**88**	**86**	**93**	**82**	**93**	**93**	**95**	**85**

1/ Refers to acres receiving one or more applications of a specific ingredient.
2/ Refers to acres reported as receiving one or more applications of a specific pesticide class.
3/ Total applied excludes Bt's (Bacillus thuringiensis). Quantities are not available because amounts of active ingredient are not comparable between products.
4/ Insufficient reports to publish data for one or more of the fertilizer or pesticide classes.
5/ State not surveyed in 2001.
- Not applicable.
Source: "Agricultural and Chemical Usage - 2001 Field Crops Summary": FCCUS, National Agricultural Statistics Service, USDA.

TERMS AND DEFINITIONS

Active ingredient is the specific chemical which kills or controls the target pests. Usage data are reported by pesticide product and are converted to an amount of active ingredient. A single method of conversion has been chosen for active ingredients having more than one way of being converted. For example, in this report, copper compounds are expressed in their metallic copper equivalent, and others such as 2,4-D and glyphosate are expressed in their acid equivalent.

Agricultural chemicals are the active ingredients in fertilizers and pesticides.

Rate per application refer to the average number of pounds of a fertilizer primary nutrient or pesticide active ingredient applied to an acre of land. Rate per acre is the average number of pounds applied in one application. Rate per crop year is the average number of pounds applied counting multiple applications. Number of applications is the average number of times a treated acre receives a specific agricultural chemical.

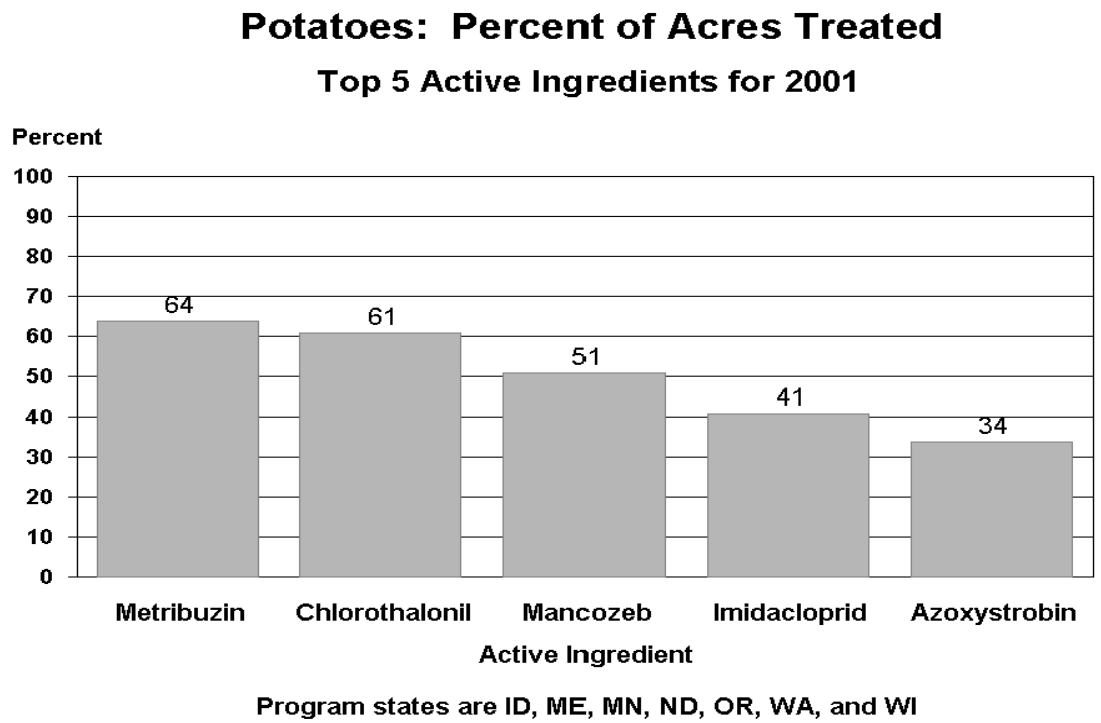
Area applied represents the percentage of crop acres receiving one or more applications of a specific agricultural chemical. This report does not contain acre treatments. However, acre treatments can be calculated by multiplying the acres planted by the percent of area applied and the average number of applications.

Common name is an officially recognized name for an active ingredient. This report shows active ingredient by common name.

Fertilizer in this report refers to applications of the primary nutrients: nitrogen, phosphate, and potash.

Pesticides include any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. Pests targeted by pesticides include weeds, insects, fungi, and other forms of life. Miticides and nematicides are included as insecticides while soil fumigants, growth regulators, defoliants, and desiccants are included as other chemicals.

Trade name is the trademark name given to a specific formulation of a pesticide product. A formulation contains a specific concentration of the active ingredient, carrier materials, and other ingredients such as emulsifiers and wetting agents. Some formulations as in the case of pre-mixes, can contain more than one active ingredient.



FALL POTATOES: AGRICULTURAL CHEMICAL APPLICATIONS, WASHINGTON, 1999-01 1/

Agricultural Chemicals 2/	Area Applied 3/		Applications		Rate Per Application		Rate Per Crop Year		Total Applied	
	1999	2001	1999	2001	1999	2001	1999	2001	1999	2001
	Percent		Number		Pounds Per Acre				Million Pounds	
Fertilizers:										
Nitrogen	100	97	3.6	2.2	89	109	327	244	55.5	37.6
Phosphate	99	92	1.6	1.7	142	131	242	224	40.7	33.0
Potash	97	92	1.3	1.4	194	172	264	254	43.7	37.4
	Percent		Number		Pounds Per Acre				1,000 Pounds	
Herbicides:										
EPTC	40	29	1.0	1.0	3.29	3.37	3.41	3.43	231	157
Glyphosate	-	13	-	1.0	-	0.44	-	0.44	-	9
Metolachlor	3	-	1.0	-	1.65	-	1.65	-	8	-
Metribuzin	82	74	1.2	1.0	0.37	0.43	0.44	0.46	61	54
Pendimethalin	26	39	1.0	1.0	0.69	0.73	0.69	0.73	31	46
Rimsulfuron	-	10	-	1.0	-	0.02	-	0.02	-	**
Trifluralin	27	11	1.0	1.0	0.58	0.43	0.58	0.43	27	7
Insecticides:										
Aldicarb	14	33	1.0	1.0	2.94	2.90	3.10	2.90	76	153
Azinphos-methyl	15	-	1.1	-	0.35	-	0.39	-	10	-
Carbaryl	2	-	1.2	-	1.03	-	1.24	-	3	-
Carbofuran	22	12	1.6	1.3	1.07	1.27	1.74	1.72	65	34
Cyfluthrin	-	21	-	1.3	-	0.03	-	0.04	-	1
Dimethoate	9	-	2.2	-	0.47	-	1.04	-	17	-
Esfenvalerate	16	15	1.0	1.2	0.04	0.04	0.04	0.05	1	1
Ethoprop	20	11	1.0	1.0	4.75	7.01	4.75	7.01	158	119
Imidacloprid	4	32	1.0	1.2	0.14	0.10	0.14	0.12	1	6
Methamidophos	80	49	1.7	1.9	0.96	0.96	1.73	1.85	236	143
Permethrin	7	-	1.2	-	0.12	-	0.16	-	2	-
Phorate	31	17	1.0	1.0	2.88	2.36	2.89	2.36	154	63
Propargite	19	11	1.1	1.0	1.62	1.84	1.89	1.87	60	34
Pymetrozine	-	15	-	1.2	-	0.09	-	0.11	-	3
Thiamethoxam	-	11	-	1.0	-	0.05	-	0.05	-	1
Fungicides:										
Azoxystrobin	20	27	2.3	1.4	0.11	0.13	0.27	0.19	9	8
Chlorothalonil	69	58	2.5	2.5	1.06	1.04	2.76	2.63	322	245
Copper ammonium	10	-	2.2	-	0.36	-	0.79	-	14	-
Copper hydroxide	19	10	1.3	3.0	0.54	0.55	0.75	1.65	24	27
Cymoxanil	9	12	1.8	1.9	0.13	0.03	0.23	0.06	4	1
Iprodione	32	39	1.1	1.0	0.96	0.83	1.08	0.91	59	57
Mancozeb	66	61	2.2	2.7	1.34	1.29	3.02	3.53	337	343
Mefenoxam	19	17	1.2	1.2	0.10	0.29	0.12	0.35	4	10
Metalaxyl	14	41	1.5	1.3	0.19	0.13	0.30	0.19	7	12
Metiram	37	26	2.4	2.5	1.61	1.41	4.01	3.60	251	152
Sulfur	-	23	-	1.6	-	2.76	-	4.65	-	174
Triphenyltin hydrox.	7	-	1.2	-	0.10	-	0.13	-	2	-
Other Chemicals:										
Dichloropropene	22	17	1.0	1.0	163.61	171.24	165.79	171.24	6,335	4,559
Diquat	35	32	1.1	1.1	0.41	0.48	0.47	0.52	28	27
Metam-sodium	64	53	1.0	1.0	118.43	114.13	119.63	114.13	12,916	9,614

1/ Area planted; 1999 was 170,000 acres, 2001 was 160,000 acres.

2/ Insufficient reports in 1999 to publish data for the following chemicals: Herbicides: Glyphosate, Rimsulfuron, Sethoxydim. Insecticides: Diazinon, Endosulfan, Lambda-cyhalothrin, Malathion, Methomyl, Methoxychlor, Methyl parathion, Mevinphos, oxamyl, Phosmet, Spinosad. Fungicides: Copper resinate, Dicloran, Maneb, Propamocarb hydroch., Sulfur. Other Chemicals: Chloropicrin, Cytokinins, Endothall, Maleic hydrazide, Monocarbamide dihyd., Paraquat, Sodium chlorate. Insufficient reports in 2001 to publish data for the following chemicals: Herbicides: Acetic acid, EPTC, Glufosinate-ammonium, Metolachlor, S-Metolachlor. Insecticides: Azinphos-methyl, Carbaryl, Diazinon, Dimethoate, Endosulfan, Malathion, Methoxychlor, Oxamyl, Permethrin, Phosmet, Spinosad. Fungicides: Copper amm. complex, Dicloran, Dimethomorph, Maneb, PCNB, Propamocarb hydroch., Triphenyltin hydrox. Other Chemicals: Chloropicrin, Endothall, Maleic hydrazide, Paraquat.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical.

*** Total applied is less than 1,000 lbs. - Insufficient reports to publish state level usage estimates. Note: Data may not multiply across due to rounding.*

Source: "Agricultural and Chemical Usage - 2001 Field Crops Summary": FCCUS National Agricultural Statistics Service, USDA.

TRADE NAMES, COMMON NAMES, AND CLASSES

The following is a list of common name, associated class, and trade name of active ingredients in this publication. The classes are herbicides (H), insecticides (I), fungicides (F), and other chemicals (O). This list is provided as an aid in reviewing pesticide data. Pre-mixes are not cataloged. The list is not complete for all pesticides used on field crops and NASS does not mean to imply use of any specific trade name.

Class	Common Name	Trade Name
I	aldicarb	Temik
I	azinphos-methyl	Guthion
F	azoxystrobin	Abound, Quadris
I	carbaryl	Sevin
I	carbofuran	Furadan
F	chlorothalonil	Echo, Terranil, Ridomil, Ensign, Bravo Ultra, Tattoo C, Bravo, Ridomil Gold Bravo
F	copper amm. complex	Copper-Count N
F	copper hydroxide	Champ, Kocide, Nu-Cop, Ridomil Copper
I	cyfluthrin	Aztec, Baythroid, Leverage
F	cymoxanil	Curzate
O	dichloropropene	Telone
I	dimethoate	Dimethoate, Digon, Dimate
H,O	diquat	Diquat
I	esfenvalerate	Asana
I	ethoprop	Mocap
H	glyphosate	Gyphomax, Glyfos, Mirage, Roundup, Protocol, Extreme, Jury, Bronco, Fallow Master, Landmaster, Field Master
I	imidacloprid	Admire, Leverage, Provado
F	iprodione	Rovral
F	mancozeb	Manex, Penncozeb, Ridomil, Dithane, Manzate, Curzate, Acrobat, Gavel
F	mefenoxam	Flourish Ultra, Ridomil Gold, Ridomil Gold Bravo
F	metalaxyl	Ridomil, Apron, Ridomil Gold, Prevail
O	metam-sodium	Nemasol, Sectagon, Vapam, Metam Sodium
I	methamidophos	Monitor
F	metiram	Polyram
H	metolachlor	Dual, Dual II, Bicep, Turbo
H	metribuzin	Axiom, Canopy, Lexone, Sencor, Turbo, Boundary, Domain
H	pendimethalin	Prowl, Pursuit Plus, Steel, Squadron
I	permethrin	Pounce, Ambush
I	phorate	Thimet, Phorate
I	propargite	Comite
I	pymetrozine	Fulfill
H	rimsulfuron	Accent Gold, Basis, Matrix, Steadfast, Basis Gold
I,F	sulfur	Bravo, Golden-Dew, Sulfer, Microthiol Special, Kumulus, Super Six, Thiolux
I	thiamethoxam	Actara, Centric
H	trifluralin	Treflan, Trific, Trilin, Trust
F	triphenyltin hydrox.	Super Tin, Agri Tin, Blite Out Plus

Fall Potatoes: Number of Usable Reports, 2001

* State data not published due to insufficient number of reports.